Figure 1

Figure 2

Figure 3

A. TATA Subsite Selection:

3'AAA5'　　3'AAA5'

	-1	1	2	3	5	6
Phage Display Consensus:	Q	+	_	N	_	_

Group I:

-1	1	2	3	5	6
Q	R	G	N	L	V
Q	K	T	N	M	V
Q	K	Y	N	I	L
Q	R	Y	N	V	V
Q	K	G	N	M	V
Q	K	G	N	H	V
Q	K	G	N	M	V (3)
Q	R	G	N	K	V
Q	R	G	N	K	T
Q	L	G	N	M	V
Q	K	G	N	K	V
Q	L	G	N	K	V

-1	1	2	3	5	6
N	S	G	A	_	N

-1	1	2	3	5	6
N	S	G	A	Y	N
N	S	G	A	W	N (4)
N	S	G	A	F	N
N	S	G	T	H	N
N	T	G	A	Y	N
G	S	G	A	Y	N (4)

Group II:

Q	R	G	N	K	K	(2)
Q	R	C	N	K	K
Q	R	G	N	V	K
Q	K	G	N	K	K
Q	K	G	N	Y	K
Q	K	H	N	K	K
Q	K	G	N	S	R
Q	S	G	N	K	K

Q	K	S	N	L	R
Q	K	A	N	T	K
Q	K	A	N	K	L
Q	L	S	N	K	K
Q	P	G	N	K	K	(2)
Q	K	G	N	N	V
Q	K	S	N	N	V
Q	K	H	N	L	R

C. NRE Subsite Selection:

3'ACT5'

Group I:

first selection:

-1	1	2	3	5	6
N	S	G	S	W	K

second selection:

-1	1	2	3	5	6
N	S	G	S	W	K	(15)
N	H	G	S	W	K	(2)
N	S	G	S	H	K

Phage Display Consensus:

| T | _ | T | N | _ | S |

B. p53 Subsite Selection:

3'TGT5'

	-1	1	2	3	5	6
Phage Display Consensus:	H	_	H	H	_	_

Group I:

-1	1	2	3	5	6
H	K	H	H	K	A	(2)
H	L	H	H	K	A

Q	R	W	L	N	R
Q	R	W	L	R	R
Q	D	W	L	N	R
Y	K	R	D	N	R

W	R	S	S	L	V*
W	Q	S	S	K	V*
W	Y	S	G	I	V*
F	D	S	S	R	A*

Group II:

-1	1	2	3	5	6
A	R	W	L	N	R
E	R	W	R	N	R
E	R	W	R	R	R
E	R	W	R	R	R
E	R	W	R	R	R	(2)
E	R	W	R	R	R
E	R	W	R	R	R
E	K	W	R	R	R
E	K	W	R	R	R	(2)
E	G	W	R	R	R
E	R	W	R	K	R	(2)
E	R	W	R	K	R

E	R	W	R	N	R	(4)
E	R	W	R	N	R
E	R	W	R	I	R
E	R	W	R	S	R
E	R	W	R	V	R
E	R	W	R	V	R
E	R	W	R	V	R
E	R	W	R	L	R
E	K	W	R	T	R
E	N	W	R	K	R
E	Q	W	R	K	R
E	R	W	R	M	R

D. Group III Fingers:

	-1	1	2	3	5	6
From the TATA Selection:	R	R	W	L	K	L
	R	K	W	L	K	L

	-1	1	2	3	5	6
	R	K	W	L	Q	L
	R	K	W	L	R	L	(2)

From the p53 Selection:

R	K	W	L	R	L
R	K	W	L	R	L
R	K	W	L	R	L
R	K	W	L	R	L

R	K	W	L	M	L
R	K	W	I	N	L
R	K	W	Y	Q	L

From the NRE Selection:

R	K	W	L	R	L
R	K	W	L	K	L
R	K	W	L	K	L

| R | A | W | L | K | L |
| R | K | W | Y | R | L |

Behavior of different Fluorescent Proteins in the Bacterial Two-Hybrid System

Fig. 4

Figure 5.

Controls   Sorted candidates
M − +   1 2 3 4 5 6 7 8 9

500 bp
400 bp
300 bp

200 bp

100 bp
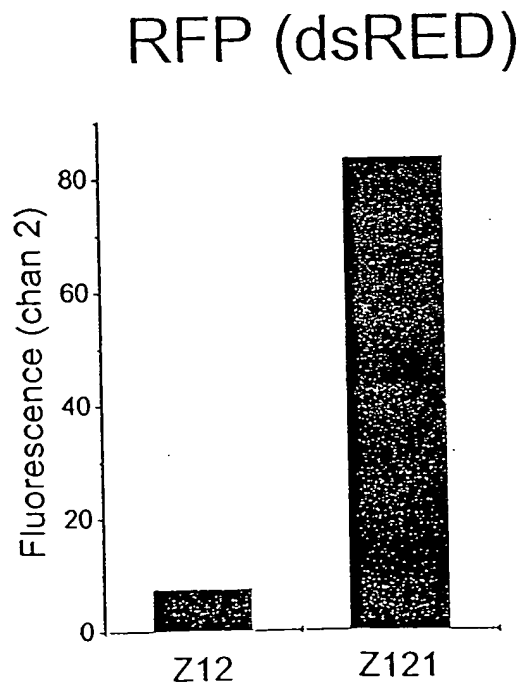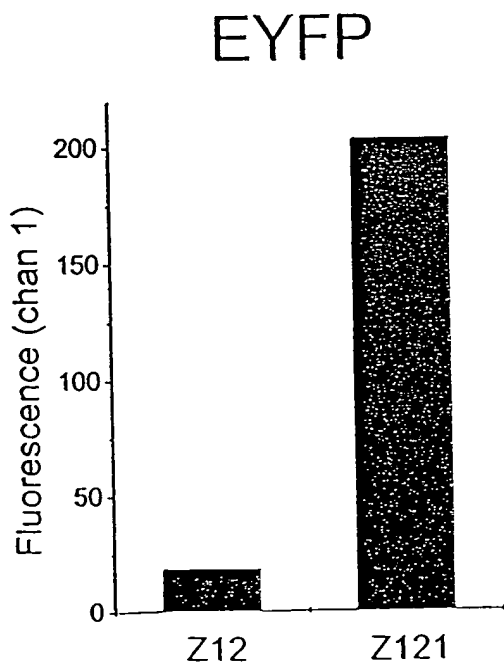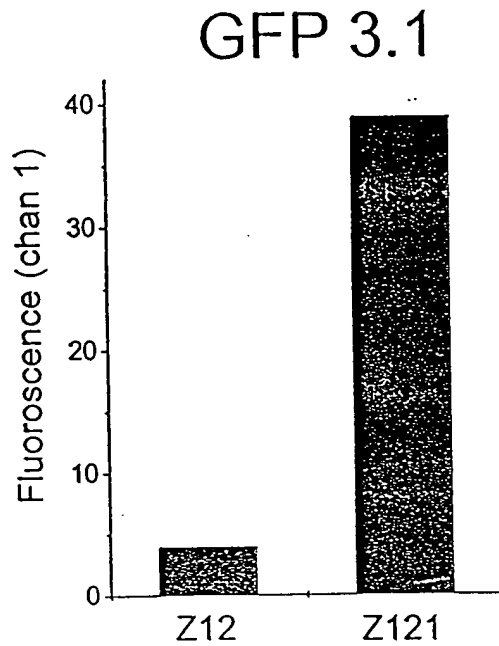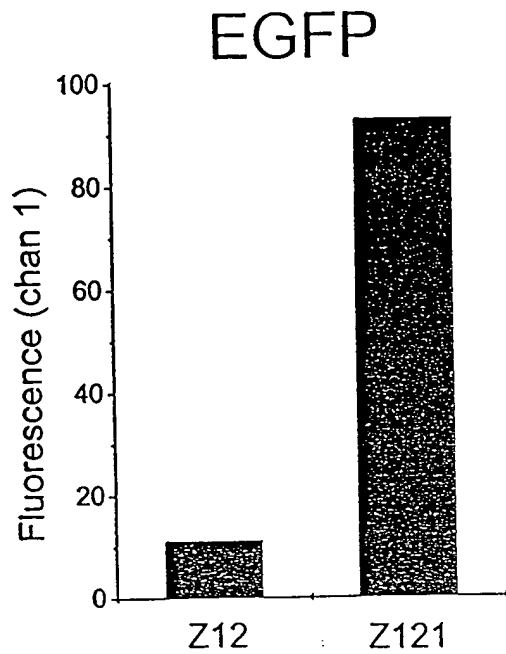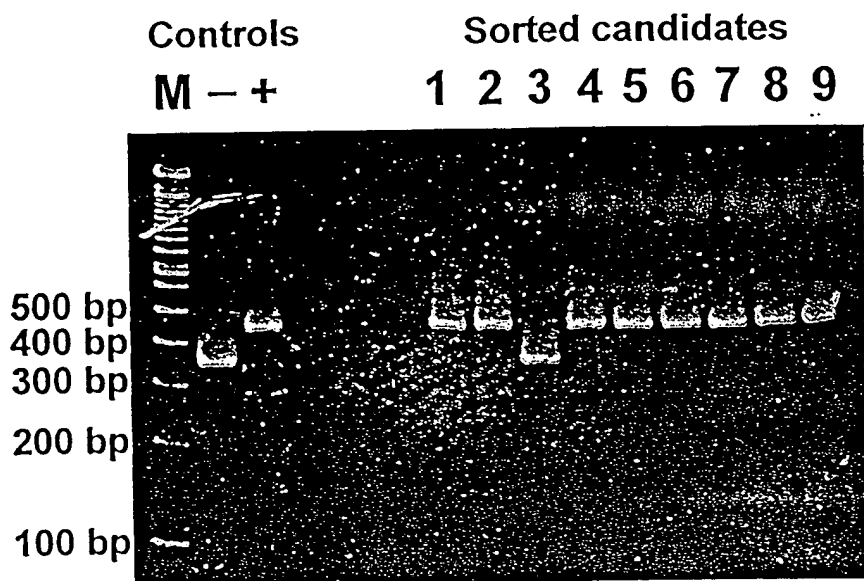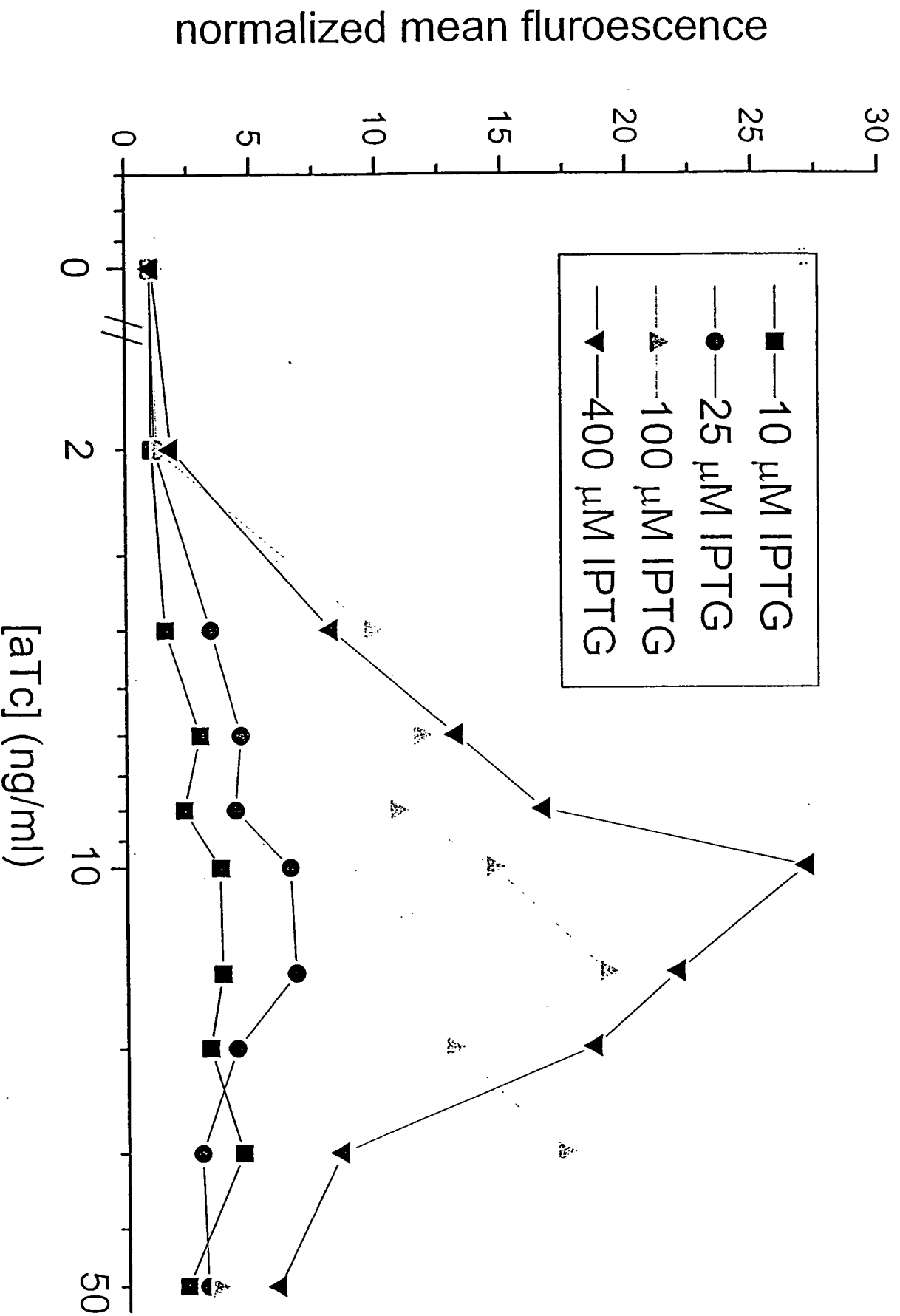
Figure 6

Figure 7

reporter construct #2   reporter construct #1
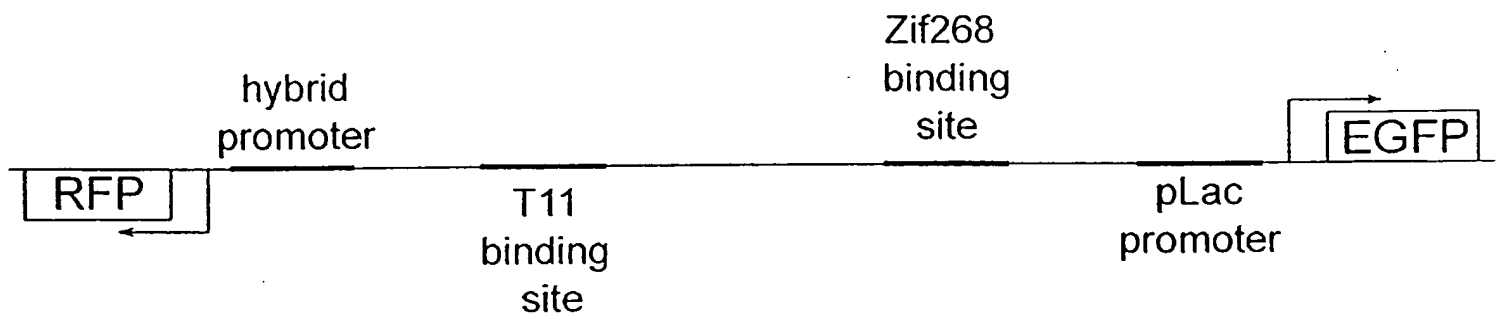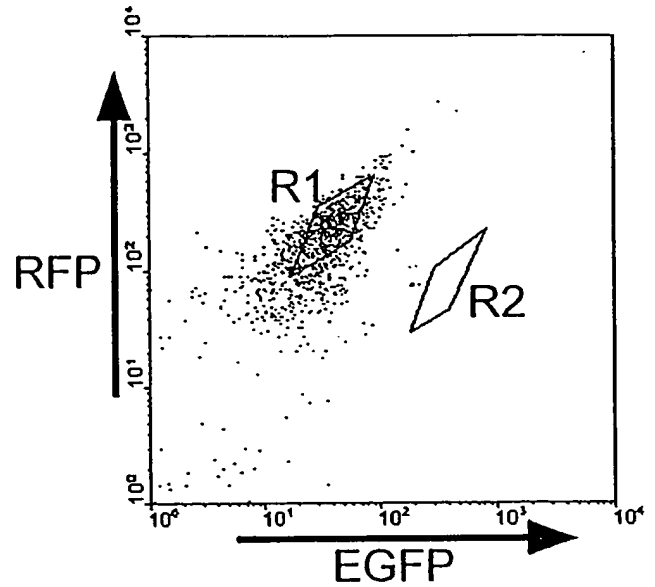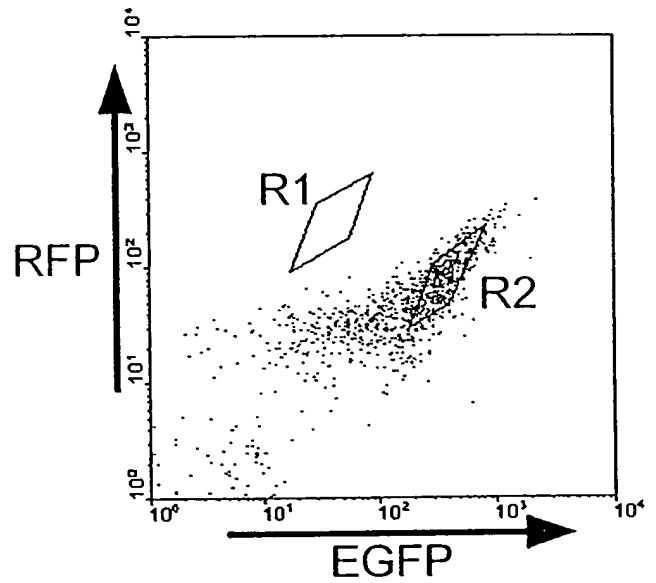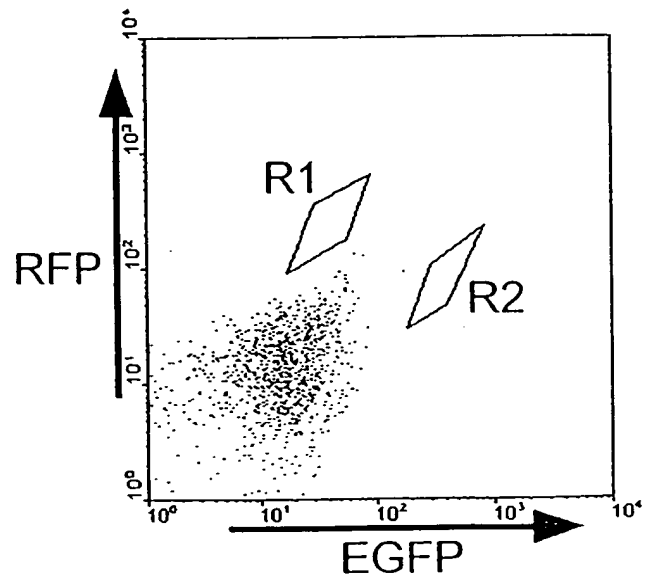
Figure 8

Two-Color reporter +
Gal11P-T11 protein

Two-Color reporter +
Gal11P-Zif268 protein

Two-Color reporter +
Gal11P-Z12 protein

Fig 9

P53^{ZF} *in vitro* site selection consensus sequence:

CXGGA<u>CACG</u>TX

(where X = no clear preference)

In vivo site selection library

CGGGA<u>NNNN</u>NG

(where N = a mixture of A, G, C, and T)

Selected Clones:

Sequence	# of clones
CGGGA<u>CACG</u>TG	9
CGGGA<u>CATG</u>TG	5
CGGGA<u>CACG</u>GG	2

Sequence	Fold Activation
CGGGA<u>CACG</u>TG	18.6±2.7
CGGGA<u>CATG</u>TG	12.0±0.5
CGGGA<u>CACG</u>GG	12.6±1.9